

neutralizing with up to 15% by weight, based on the weight of the adduct, of at least

BS
med one neutralizing agent; and

removing the organic auxiliary solvent.

BASIS FOR THE AMENDMENTS

Claim 1 has been canceled in favor of Claim 2, which is now the broadest claim in the case. This claim has also been amended to remove the molecular weight limitation and to add a T_g limitation. All other amendments are formal in nature. Support for the amendments is found at Claims 1 and 2 as originally filed in the specification in paragraph [0018].

Claims 3, 6, 9-11 have been amended to obviate the formal rejections. Support for the amendments is found in the claims as originally filed.

Claim 25 has been amended to include the limitations of Claim 26, to recite a solid, pulverulent composition, to remove the molecular weight limitation, to add a T_g limitation, and to more clearly point out that the percents by weight are based on the weight of the adduct. Support is found at Claims 25 and 26 as originally filed and in the specification, for example, at paragraph [0018].

Claims 1, 12 and 26 have been canceled accordingly.

No new matter is believed to be added by entry of the amendments. Upon entry of the amendments, Claims 2-11 and 13-25 will be active and in condition for allowance. Entry and favorable consideration are kindly solicited.

REMARKS

Applicants thank Examiner Sergeant for considering the Information Disclosure Statements filed January 31 and February 5, 2002. Applicants kindly point out that an

Information Disclosure Statement was also filed on July 24, 2002, and request that it be considered and that the Examiner so indicate in the next paper.

The rejections set out in paragraph 1 and 2 of the Official Action are obviated by appropriate amendment. Withdrawal of these grounds of rejection is kindly solicited.

The rejections over WO 99/52961, Reiff et al '370, '482 or '737, and Konig et al '860 have been obviated by amendment. The claims are now limited to solid, pulverulent, water-dispersible, blocked polyisocyanate adducts, which are nowhere disclosed or suggested in any of the cited references.

WO '961 discloses blocked oligomeric isocyanates and their production and use, which are made hydrophilic with monofunctional, low-viscosity polyethers. Water-dispersible solids are not disclosed or suggested, and the invention is not anticipated or made obvious by this reference either alone or in combination with the other cited references.

Reiff et al '370, '482 and '737 and Konig et al '860 do not anticipate or make obvious the claimed invention.

Reiff et al '370 discloses blocked polyisocyanates having molecular weights of 800 to 500g/mol, an NCO functionality of 2.2-4.5, and an NCO content of 5-20%. These hydrophilic blocked polyisocyanates are processed directly to the corresponding dispersions using either auxiliary solvents or low-viscosity polyethers. Solid, blocked, water-dispersible polyisocyanates are not disclosed. The same is true for Reiff et al '737.

In Reiff et al '482, the hydrophilic blocked polyisocyanates are processed directly to the corresponding dispersions. Again, auxiliary solvents or low-viscosity polyethers are required, and solid blocked polyisocyanates are not disclosed or suggested. Thus, the present invention is neither anticipated nor made obvious by the disclosures of the Reiff et al patents.

Konig et al '860 discloses aqueous polyisocyanate cross-linking agents modified with hydroxycarboxylic acids and pyrazole-based blocking agents. Here, auxiliary solvents are

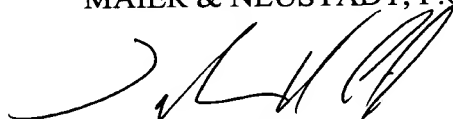
required to make the dispersion. See, e.g., Example 1 therein. Solid pulverulent dispersible polyisocyanate mixtures are not disclosed or suggested, and the invention cannot therefore be anticipated or made obvious by the teachings of Konig et al.

The combination of any of WO '961, Reiff et al '370, '482 or '737, and Konig et al '860 does not make the claims obvious, because none of the references disclose or suggest a pulverulent water-dispersible blocked polyisocyanate. The claimed invention provides a solid, which is stable during storage and which can be dispersed in water without the use of additional solvents or low-viscosity polyethers. In contrast to the conventional dispersions, the present invention affords virtually unrestricted storage stability, it desirably reduces transport costs because it avoids the need to transport the unreacted component water, and the end user can desirably formulate the solids content and required spray viscosity on an individual basis. Nowhere is either the present invention or its attendant advantages disclosed or suggested in the prior art, and the claims are thus believed to present patentable subject matter.

For all the reasons given above, Applicants kindly request that the art rejections be withdrawn and that the Examiner pass this case to allowance. An early and favorable indication of same is kindly requested.

Respectfully submitted,

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IN THE CLAIMS

Please cancel Claims 1, 12 and 26.

Please amend the claims as follows.

--1. (Canceled).

2. (Amended) [The blocked polyisocyanate adduct of claim 1, wherein said adduct is
a] A solid, pulverulent, [waterdispersible adduct] water-dispersible, blocked polyisocyanate
adduct comprising:

5 to 95% by weight, based on the total weight of the adduct, of at least one isocyanate
component having at least one NCO group, said isocyanate component selected from the
group consisting of aliphatic, cycloaliphatic and aromatic isocyanates, wherein said
isocyanate has a Tg greater than 50 °C and an average NCO functionality of 2-4;

5 to 70% by weight, based on the total weight of the adduct, of at least one
hydrophilicizing component containing at least one group which is reactive toward the at
least one NCO group;

at least one blocking agent for blocking from 95 to 100% of the NCO groups which
do not react with the hydrophilicizing component; and

up to 15% by weight, based on the total weight of the adduct, of at least one
neutralizing agent.

3. (Amended) The blocked polyisocyanate adduct of claim 2, wherein the isocyanate
component is at least one diisocyanate selected from the group consisting of 1,6-
diisocyanatohexane (HDI), bis(4-isocyanatocyclohexyl)methane (HMDI), 1,5-diisocyanato-

2-methylpentane (MPDI), 1,6-diisocyanato-2,4,4-trimethylhexane (TMDI) [or] and 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate (IPDI).

6. (Amended) The blocked polyisocyanate adduct of claim 2, wherein the isocyanate is a product of at least one diisocyanate selected from the group consisting of 1,6-diisocyanatohexane (HDI), bis(4-isocyanatocyclohexyl)methane (HMDI), 1,5-diisocyanato-2-methylpentane (MPDI), 1,6-diisocyanato-2,4,4-trimethylhexane (TMDI) [or] and 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate (IPDI) and at least one compound selected from the group consisting of polyol[s] and polyamine[s].

9. (Amended) The polyisocyanate adduct of claim 2, wherein the hydrophilicizing component is an ionic component [is] selected from the group consisting of monohydroxyalkylcarboxylic acids, polyhydroxyalkylcarboxylic acids, -sulfonic acids, -phosphonic acids, monofunctional aminocarboxylic acids, and polyfunctional aminocarboxylic acids.

10. (Amended) The blocked polyisocyanate adduct of claim 2, wherein the [nonionic] hydrophilicizing [agent has] component is a nonionic hydrophilicizing agent having at least one terminal hydroxyl group.

11. (Amended) The blocked polyisocyanate adduct of claim 10, wherein the nonionic hydrophilicizing agent is [polyethers is] selected from the group consisting of polyether[s] containing 80-100% by weight of ethylene oxide units, based on the weight of the polyether, and polyether[s] containing 80-100% by weight of propylene oxide units, based on the weight of the polyether.

12. (Canceled).

15. (Amended) The blocked polyisocyanate adduct of claim 2, wherein said neutralizing agent is present in an amount greater than 0% by weight, based on the weight of the adduct.

25. (Amended) A process for the water-free preparation of a solid, pulverulent, water-dispersible, blocked polyisocyanate adduct comprising:

reacting, in an organic auxiliary solvent,

5 to 95% by weight, based on the weight of the adduct, of at least one isocyanate component selected from the group consisting of aliphatic, cycloaliphatic and aromatic isocyanates, wherein said isocyanate has [an average molecular weight of up to 1000 g/mol] a Tg greater than 50°C and an average NCO functionality of 2-4 with

5 to 70% by weight, based on the weight of the adduct, of at least one hydrophilicizing component containing at least one group which is reactive toward the NCO groups; [and]

blocking any remaining unreacted NCO groups with at least one blocking agent for blocking from 95 to 100% of the NCO groups not reacting with the hydrophilicizing component;

neutralizing with up to 15% by weight, based on the weight of the adduct, of at least one neutralizing agent; and

removing the organic auxiliary solvent.

26. (Canceled).--